DEPARTMENT of ENVIRONMENTAL SERVICES Water Division - Watershed Management Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: OPECHEE BAY
Town: LACONIA Maximum depth (m): 18.8
County: Belknap Mean depth (m): 6.9
River Basin: Merrimack Volume (m³): 11886000
Latitude: 43°32'43" N Relative depth: 1.3
Longitude: 71°28'23" W Shore configuration: 2.04
Elevation (ft): 492 Areal water load (m/yr): 241.7
Shore length (m): 9500 Flushing rate (yr⁻¹): 35.10
Watershed area (ha): 91242.6 P retention coeff.: 0.06
% watershed ponded: 23.6 Lake type: natural w/dam 172.68

BIOLOGICAL:	27 January 2000	22 June 1999
DOM. PHYTOPLANKTON (% TOTAL) #1	TABELLARIA 55%	STEPHANODISCUS 35%
#2	ASTERIONELLA 30%	TABELLARIA 10%
#3	FRAGILARIA 10%	COELOSPHAERIUM 10%
PHYTOPLANKTON ABUNDANCE (units/mL)		
CHLOROPHYLL-A (µg/L)		2.89
DOM. ZOOPLANKTON (% TOTAL) #1	ACTINOPHRYS 55%	KELLICOTTIA 20%
#2	KERATELLA 18%	NAUPLIUS LARVA 17%
#3	SYNCHAETA 13%	VORTICELLA 11%
ROTIFERS/LITER	32	28
MICROCRUSTACEA/LITER	6	24
ZOOPLANKTON ABUNDANCE (#/L)	85	70
VASCULAR PLANT ABUNDANCE		Scat/Common
SECCHI DISK TRANSPARENCY (m)		6.1
BOTTOM DISSOLVED OXYGEN (mg/L)	17.2	5.3
BACTERIA (E. coli, #/100 ml) #1		
#2		
#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 8.0 Hypolimnion volume (m³): 942500

Anoxic volume (m^3) : None

CHEMICAL:		Lake: Town:	OPECHEE I	BAY	
	27 Janua	ary 2000	22 .	June 1999	
DEPTH (m)	4.0	8.0	3.0	8.0	15.0
pH (units)	6.6	6.7	7.0	6.8	6.4
A.N.C. (Alkalinity)	7.3	7.5	7.5	7.4	8.8
NITRATE NITROGEN	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
TOTAL KJELDAHL NITROGEN	< 0.10	< 0.10	0.50	0.40	0.60
TOTAL PHOSPHORUS	0.006	0.007	0.006	0.009	0.013
CONDUCTIVITY (µmhos/cm)	70.9	70.7	73.2	76.9	79.7
APPARENT COLOR (cpu)	9	8	15	15	15
MAGNESIUM			0.76		
CALCIUM			4.5		
SODIUM			10.7		
POTASSIUM			1.05		
CHLORIDE	13	14	14		16
SULFATE	5	5	4		4
TN : TP		· · · · · · · · · · · · · · · · · · ·	83	44	46
CALCITE SATURATION INDEX			2.8	•	

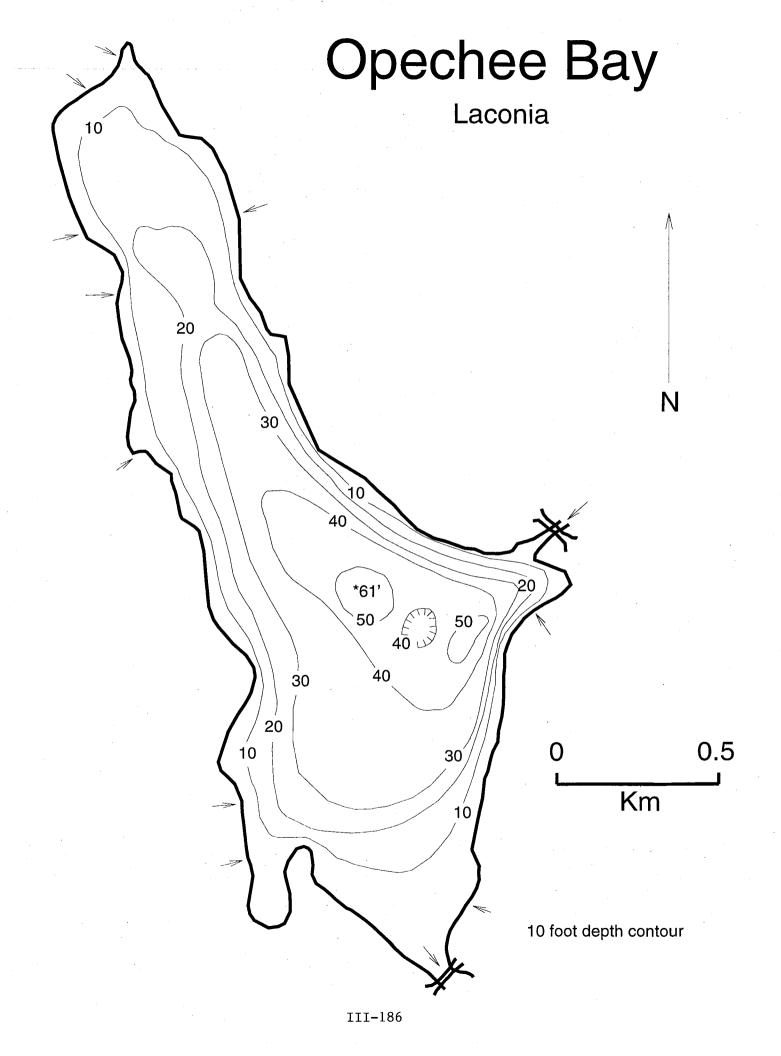
All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1999

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
0	1	2	. 0	. 3	Oligo.

COMMENTS:

- 1. AKA Opechee Lake.
- 2. Opechee Bay was previously surveyed and classified in 1979 and 1986. In both of those years it was rated mesotrophic, primarily because of no dissolved oxygen in the bottom waters. The presence of bottom dissolved oxygen (and hence the oligotrophic rating) in 1999 may be because of the earlier sampling date (June versus July in 1979 and 1986).



FIELD DATA SHEET

LAKE: OPECHEE BAY

DATE: 06/22/1999

TOWN: LACONIA

WEATHER: Hot, Humid, calm water

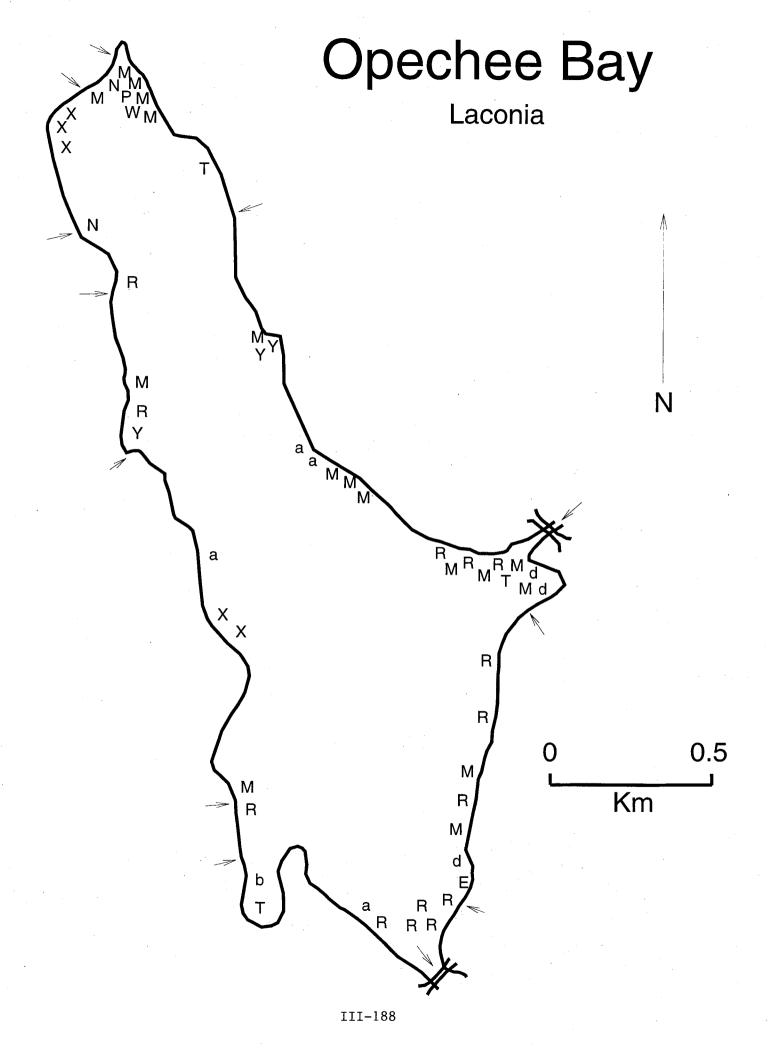
DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
0.1	23.9	9.0	107 %
1.0	22.3	9.0	104 %
2.0	22.1	9.1	105 %
3.0	22.0	9.2	105 %
4.0	21.9	9.2	105 %
5.0	21.8	9.1	104 %
6.0	21.5	9.1	103 %
7.0	19.5	9.7	105 %
8.0	17.2	10.2	106 %
9.0	14.0	9.5	93 %
10.0	12.6	8.4	79 %
11.0	11.2	6.6	60 %
12.0	10.8	5.2	47 %
13.0	10.6	5.1	46 %
14.0	10.4	5.2	47 %
15.0	10.4	5.3	48 %
16.0	10.3	5.3	48 %
17.0	10.3	5.4	48 %
18.0	10.2	5.3	48 %

SECCHI DISK (m): 6.1 COMMENTS:

BOTTOM DEPTH (m): 18.8

TIME: 1228

*Dissolved oxygen values are in mg/L



AQUATIC PLANT SURVEY

TOWN: LACONIA

Key	PLANT	ADIMONNOS		
кеу	GENERIC	COMMON	ABUNDANCE	
R	Potamogeton robbinsii	Robbins pondweed	Scattered	
E	Eriocaulon septangulare	Pipewort	Sparse	
d	Dulichium arundinaceum	Three-way sedge	Sparse	
M	Myriophyllum heterophyllum	Water milfoil	Scat/Common	
T	Typha	Cattail	Sparse	
N	Nymphaea	White water lily	Sparse	
Р	Pontederia cordata	Pickerelweed	Sparse	
W	Potamogeton spp.	Thin-leaved pondweed	Sparse	
Y	Nuphar	Yellow water lily	Sparse	
b	Scirpus	Bulrush	Sparse	
a	Potamogeton amplifolius	Bass weed	Scattered	
Х		Bottom growth	Scattered	

OVERALL ABUNDANCE: Scat/Common

DATE: 06/22/1999

GENERAL OBSERVATIONS:

LAKE: OPECHEE BAY

- 1. Milfoil was locally abundant in the very northern cove, forming a thick mat in some areas. Milfoil was common around the Winnipesaukee River inlet area and fragments of milfoil were observed floating in several areas of the lake.
- Non-flowering bottom growth was probably more widespread than indicated on the map.
 Visibility was poor in places because of sporadic algal growth (the blue-green alga Coelosphaerium).